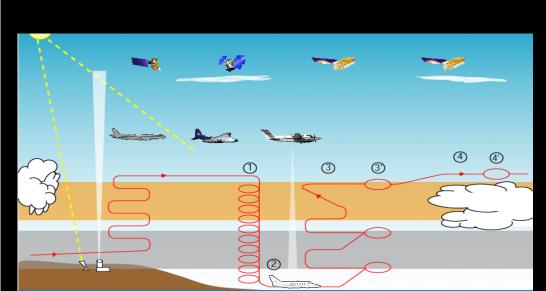
## Steve Hipskind Chief, Earth Science Division

# R&D Collaborations and Partnerships

Climate Change Adaptation Symposium 4 February 2011

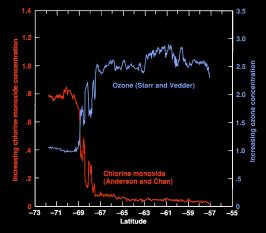




Leaf Area Index Leaf Area Index - 5-year Average California - 1km Feb 2005 - Long Term Averag California - 1km Oct 16, 2005 - Oct 23, 2005

**Atmospheric Composition** 

**Ecosystem Forecasting** 



**Antarctic Ozone Hole** 



**Coral Reef Health** 



## Airborne Science Office

- Requirements definition
- Earth Science Project Office (ESPO)
- Airborne Sensor Facility

















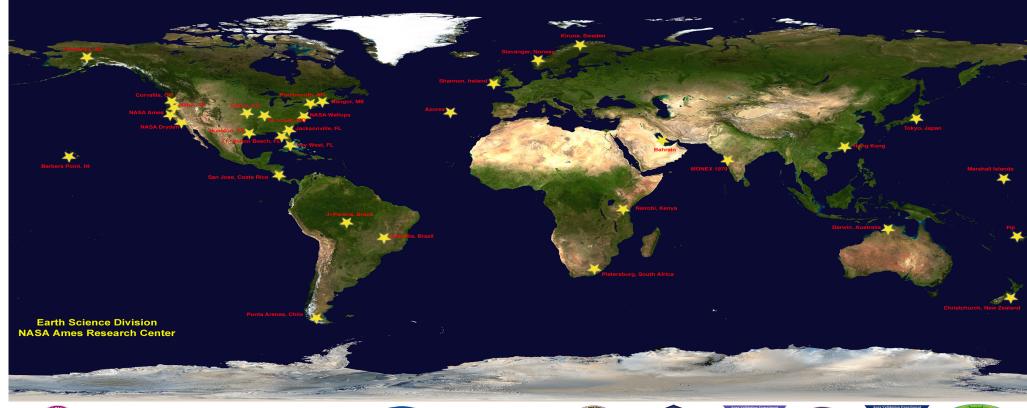










































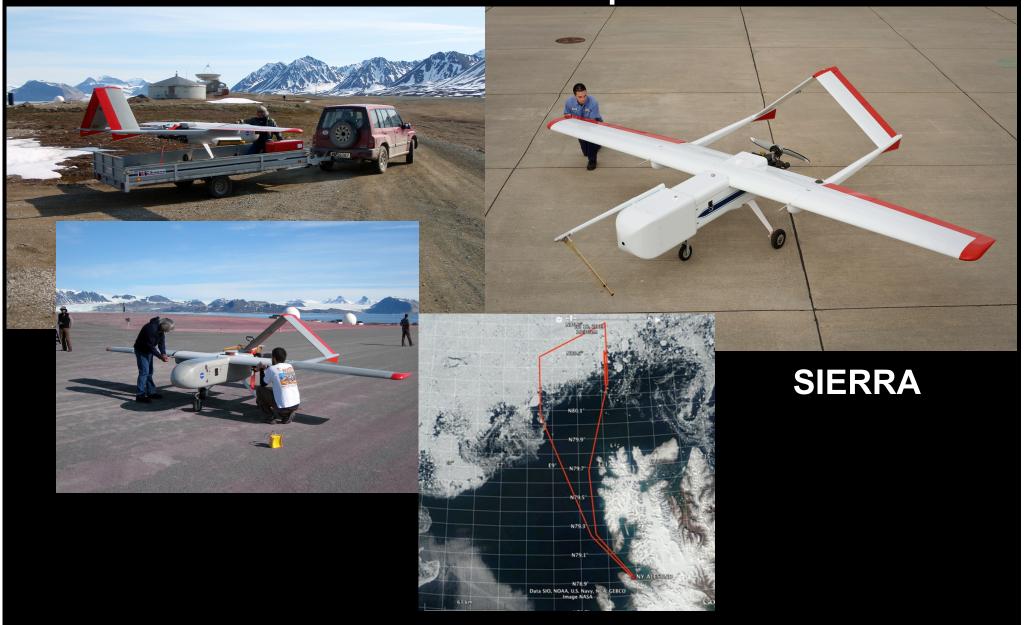






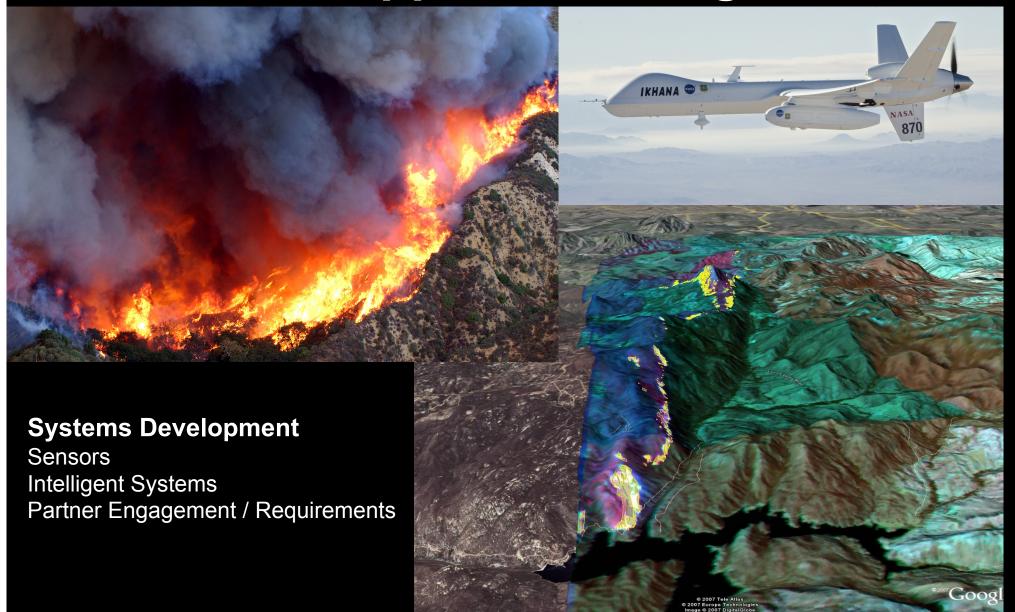


**Small UAS Development** 





## **NASA** support to fire fighters











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### **Arctic Air Quality & Transport NASA Contribution to IPY**



### **Inter-continental Pollution Transport**





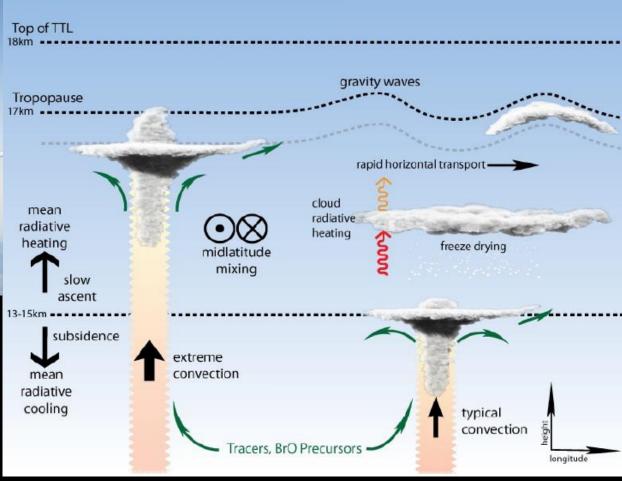




Inaugural Venture Class Mission



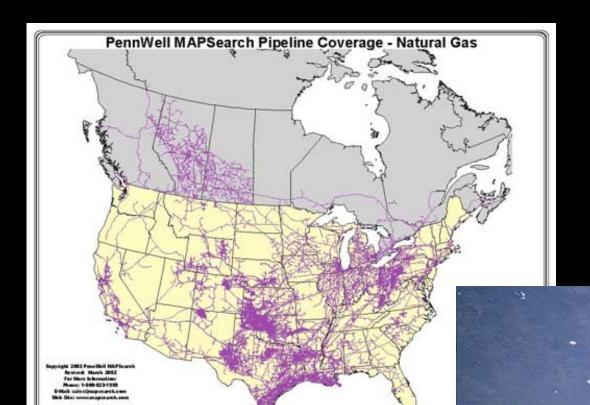






## **PARTNERSHIPS**





**Pipeline Research Council International** 



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planetaryskin





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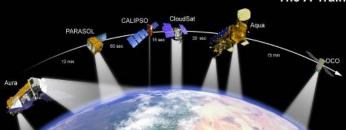
## ARCTAS-CARB

18-26 June 2008





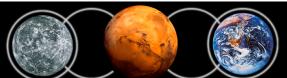
The A-Train







- 1. GHG Emission Inventories
- 2. Offshore Sulfur emissions ships, natural sources
- 3. Aerosol chemistry marine boundary layer
- 4. Upwind conditions for air quality models over CA cities

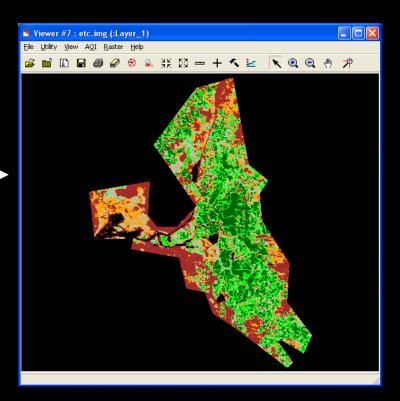


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### ARRA Funding California Water Resources DWR

## California Wines (\$30B Industry)









H211













## **DEVELOP**

Student Led / NASA Scientist Mentored Training and Development Program

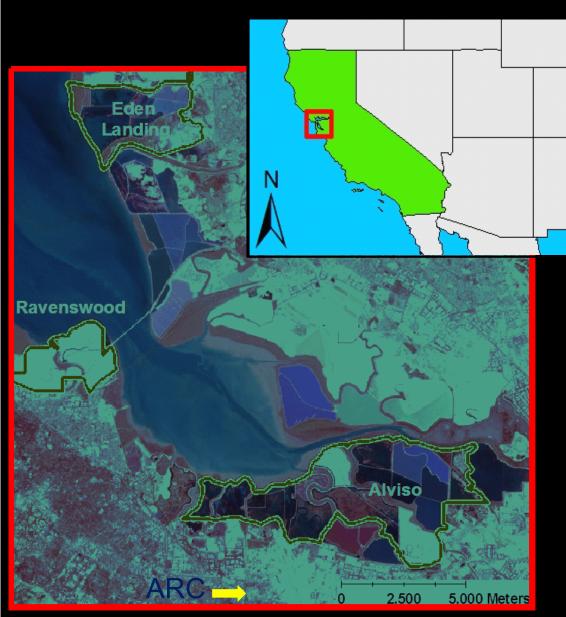
http://develop.larc.nasa.gov







## Salt Pond Restoration Project





- Three restoration sites
- 15,100 acres
- Alviso, Eden's Landing & Ravenswood





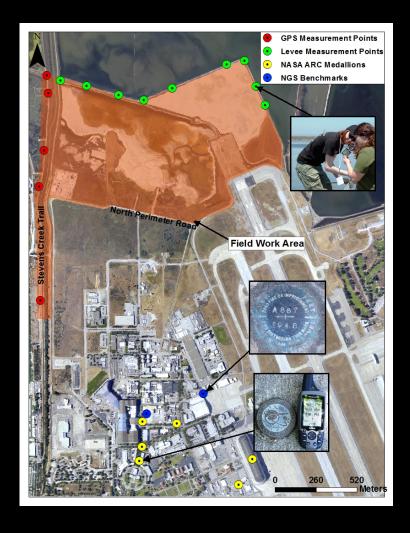


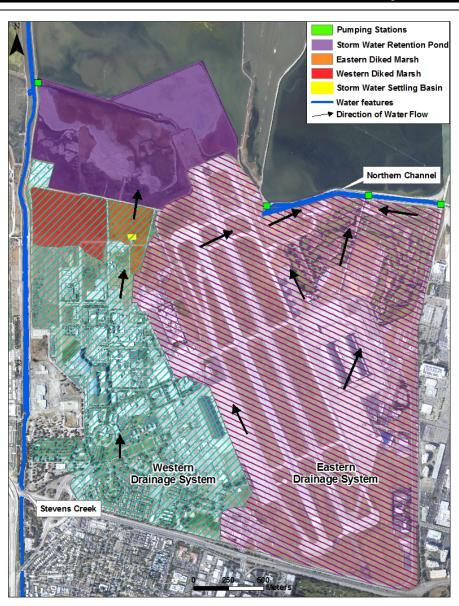




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Katherine Pitts, San Jose State University
Ariana Gonzales, Cal Poly Pomona





Science Advisors Max Loewenstein, Cristina Milesi, Laura Iraci









### COLLABORATION



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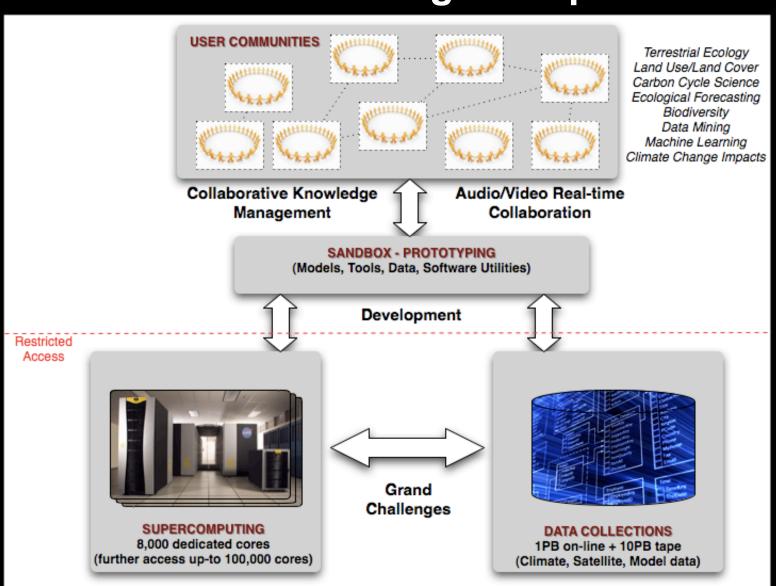


To encourage exploration and collaboration in the Earth science community to create new ways to understand and improve life here on Earth.



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### Welcome to Early Release of NEX!

"We are looking forward to your feedback" Thank you for joining NASA Earth Exchange (NEX) Web Portal. We hope NEX would provide a useful for your needs. Don't be shy about contacting us about broken links and letting us know how we can improve the site.



The monitoring and modeling of the terrestrial biosphere within the larger context of climate variability and change studies requires global multi-decadal time series of key variables characteristic of vegetation structure and functioning. Leaf Area Index (LAI) is a key biophysical ...



TOPS is a data and modeling software system designed to seamlessly integrate data from satellite, aircraft, and ground sensors with weather/climate models and application models to expeditiously produce operational nowcasts and forecasts of ecological conditions. TOPS provides reliable data on ...



Anomaly Detection and Analysis Framework for Terrestria...
The goal of this project is to enhance the capabilities in Earth science data processing by developing a framework for automated anomaly detection and analysis for large heterogeneous Earth science datasets.. We will integrate this framework with the Terrestrial Observation ...

**Network** 



Visualize